II. AMENDMENTS TO THE CLAIMS

The following is a listing of claims to replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method for determining continuity of a material on a substrate, comprising:

depositing the material on the substrate using a first value of a growth metric;

depositing an amount of charge on a surface of the material;

repeatedly measuring a surface voltage of the material until an onset of tunneling to provide a Vtunnel value;

repeating the above steps for different values of the growth metric; ~~and~~

determining a growth mode of the material on the substrate, the determining including:

comparing a first derivative of a Vtunnel per growth metric curve versus the growth metric; and

examining a linearity of results of the comparison to determine the growth mode of the material on the substrate, wherein a linear region corresponds to a layer-by-layer growth mode of the material on the substrate, and wherein the non-linear region corresponds to an islanded growth mode of the material on the substrate; and

comparing the Vtunnel values for different values of the growth metric to provide a measure of the continuity of the material on the substrate.

2. (Original)   The method of claim 1, wherein the step of comparing the Vtunnel values further comprises:

determining a transition between a linear region and a non-linear region of the Vtunnel values, wherein the linear region corresponds to layer-by-layer growth of the material on the substrate, and wherein the non-linear region corresponds to islanded growth of the material on the substrate.

3. (Original)   The method of claim 1, wherein the growth metric is selected from the group consisting of thickness, time, precursor cycles, and temperature.

4. (Original)   The method of claim 1, wherein the material is deposited on the substrate using Atomic Layer Deposition (ALD).

5. (Original)   The method of claim 1, wherein a fixed amount of charge is deposited on the surface of the material.

6. (Original)   The method of claim 1, wherein the method is non-destructive and can be used in-line.

7. (Original)   The method of claim 1, wherein the material is a high-k dielectric material.

8. (Original)   The method of claim 1, wherein the step of comparing the Vtunnel values further comprises:

identifying optimum growth conditions for layer-by-layer deposition of the material on the substrate.

9. (Canceled).

10. (Canceled).

11. (Original)   The method of claim 1, further comprising the steps of:

dividing each Vtunnel value by a constant thickness value to provide an Etunnel value; and

comparing the Etunnel values for different values of the growth metric to provide a measure of the continuity of the material on the substrate.

12. (Original)   The method of claim 11, wherein the step of comparing the Etunnel values further comprises:

determining a transition between a linear region and a non-linear region of the Etunnel values, wherein the linear region corresponds to layer-by-layer growth of the material on the substrate, and wherein the non-linear region corresponds to islanded growth of the material on the substrate.

13. (Original)   The method of claim 11, wherein the step of comparing the Etunnel values further comprises:

   identifying optimum growth conditions for layer-by-layer deposition of the material on the substrate.

14. (Canceled).

15. (Canceled).

16. (Original)   A method for determining a growth mode of a material on a substrate, comprising:

   depositing the material on the substrate using a first value of a growth metric;

   depositing an amount of charge on a surface of the material;

   repeatedly measuring a surface voltage of the material until an onset of tunneling to provide a Vtunnel value;

   repeating the above steps for different values of the growth metric; and

   comparing a first derivative of a Vtunnel per growth metric curve versus the growth metric to determine the growth mode of the material on the substrate.

17. (Original)   The method of claim 16, further comprising the steps of:

dividing each Vtunnel value by a constant thickness value to provide an Etunnel value; and

comparing a first derivative of an Etunnel per growth metric curve versus the growth metric to determine the growth mode of the material on the substrate.

18. (Original)   The method of claim 16, wherein the growth metric is selected from the group consisting of thickness, time, precursor cycles, and temperature.

19. (Original)   The method of claim 16, further comprising:

examining a linearity of results of the comparison to determine the growth mode of the material on the substrate, wherein a linear region corresponds to a layer-by-layer growth mode of the material on the substrate, and wherein the non-linear region corresponds to an islanded growth mode of the material on the substrate.

20. (Canceled).